



Inside the Smart Home

Brought to you by the Smart Energy Consumer Collaborative

Your Top Questions Answered

Smart home technology, once a niche and expensive concept, has taken off over the last decade. One in four Americans now have a smart speaker in their homes, and millions of smart thermostats have sold since Nest launched its first-generation model in 2011. While these devices hold a lot of promise, let's look at some of the potential benefits and see whether smart home technology is right for you and your energy goals.

The Basics



What is a smart home?

Smart home is the term used for residences that use technology (like WiFi and Bluetooth) to enable devices to “talk” to each other and be managed on the go. Smart homes can vary from just a few connected devices to whole-home automation. Lighting, security, appliances, cameras, thermostats and even power outlets can be integrated into a smart home. Smart home devices can be controlled remotely via a smartphone, tablet, voice assistant or specialized smart home hub.

What types of smart home devices are available?

For almost anything in your home today, there’s likely a smart version of it. However, a few major categories are gaining traction. One of these is safety and security, which includes smart locks, doorbells, alarms, window sensors and surveillance cameras. Another major category is lighting and power, which includes smart lighting, power strips and thermostats. Other popular devices include smart appliances (refrigerators, dishwashers and water heaters), home entertainment technology and smart home hubs. These can be used to control and automate your smart home devices through voice commands or an app.

What benefits will I get from setting up a smart home?

The smart home can provide benefits around comfort, convenience, peace of mind, financial savings and energy efficiency. For example, with a smart doorbell, you can see who’s at your doorstep through your smartphone. With a smart thermostat, you can adjust your home’s temperature while you’re away. With some smart home hubs, you can control all of your home’s smart devices through one app or even voice commands. Smart technology can also improve appliance function. For example, a smart oven can help you determine correct cooking times. You also may be able to use smart home technology to be more energy efficient. With smart light bulbs and a smart speaker, you can say “it’s bedtime” and all the lights in your home will turn off. There are many more energy-related benefits mentioned in the *Next Steps* section.



Unexpected Benefits of the Smart Home

Save money:

Maximize energy efficiency, improve appliance functionality, catch major problems before they arise, lower home insurance and increase home value.

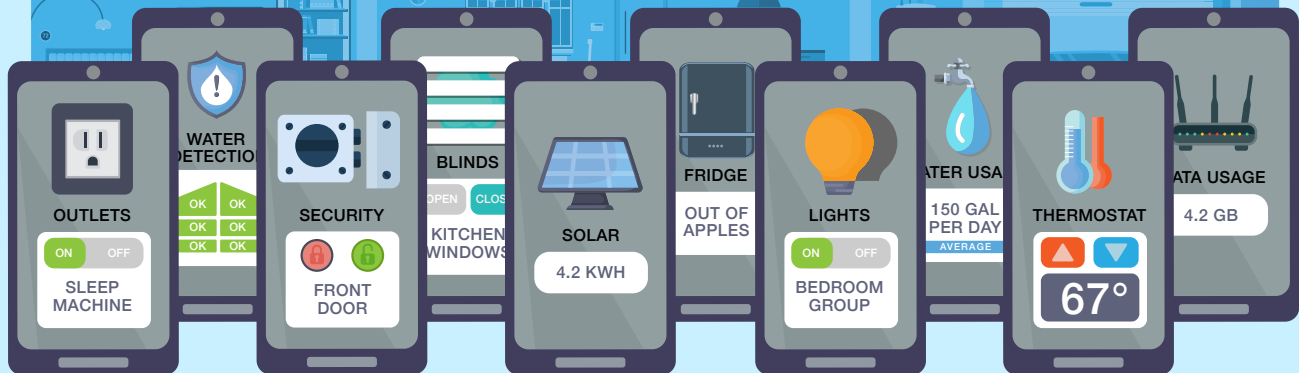
Greater convenience:

Manage all devices from one place, control devices through voice commands and automate daily needs.

Peace of mind:

Protect belongings, keep an eye on your kids, pets and aging parents and remotely monitor smoke, CO and water.

Planning a Smart Home



How do I know if smart home devices are compatible with one another?

Before setting up a smart home, make sure that your devices can communicate with each other through Bluetooth or WiFi. While companies are actively discussing the creation of a communications standard for all smart home devices, manufacturers (Apple, Amazon, Google and Samsung, among others) currently have their own platforms. When buying a new smart home device, you'll need to make sure it works with the products you already own. Fortunately, there are [compatibility guides](#) that can help you select devices that will work together.

Are smart home devices expensive?

They don't have to be. Costs for smart home devices vary considerably. For example, a Samsung smart refrigerator can set you back nearly \$4,000. However, many smart home devices are not much more expensive than their "dumb" counterparts, and several smart home hubs can be found for under \$100. Smart light bulbs, cameras and plugs/power strips are relatively inexpensive (under \$30) and can help you start harnessing the benefits of a smart home. Don't be daunted by high price tags – there are plenty of budget-friendly options out there. You can also upgrade larger price tag items like large appliances over time. In addition, many power companies offer rebates, discounts and coupons to help customers save.

Will I be able to set up a smart home by myself?

Depending on your comfort level with technology and DIY home projects, you may be able to set up a smart home entirely by yourself. If you regularly download apps and connect devices to your home's WiFi, you may be familiar enough with the basic process for many smart home products. Installing a smart thermostat is a bit more complicated since you'll need to connect some wiring, but most people find it easy to do themselves. You can start by reviewing videos on YouTube, and if you need more help, you can contact an electrician or an HVAC company. Your power company may also have a referral list of vetted technicians. If you prefer to have someone set up your smart home from scratch, look for home automation specialists in your area.

What are the privacy and security concerns with the smart home?

Privacy is understandably a concern for some when it comes to the smart home. If you have a smart home device that's left unsecure, a hacker may be able to access private information about your home. While there have been several well-publicized data breaches of smart home device manufacturers, most providers and manufacturers have layers of security to protect the privacy of customers. You can also improve the security of your devices by using strong, unique passwords, turning on encryption or two-factor authentication (if available) and making sure that your home's WiFi is secure.

Next Steps

Where should I get started with setting up my smart home?

A good first step is to select your smart home assistant like Apple's Siri, Amazon's Alexa and Google Assistant. Once you have your smart speaker or smart home hub in place, you can start looking for compatible products that fulfill your goals, such as energy savings, convenience, home security and entertainment. If reducing your power bill and carbon footprint are your goals, then a smart thermostat, lightbulbs and plugs/power strips can be an ideal starter pack. Smart blinds, ceiling fans and home energy monitors are also good options. If home security is one of your goals, get started with a smart home security system, doorbell and cameras.

Will I save money using smart home products?

It depends. While convenience, comfort and entertainment value are all big factors, it is possible to save money with a smart home. For example, using a smart leak sensor, sprinkler, dishwasher or shower head can reduce your water usage significantly. Home security devices can also save you money by reducing theft and lowering insurance premiums. Another major area of potential savings is through a home's energy usage, which we'll explore next.

How can I use less energy with my smart home?

Smart home devices can play a major role in helping you create a more energy-efficient home. For example, smart LED light bulbs use at least 75 percent less energy and last 25 times longer than incandescent bulbs. They can also be dimmed or turned off remotely to save even more energy. Smart thermostats can save you between 10-20 percent on heating and cooling costs, a major source of home energy use. You can also identify potential issues with your HVAC, sparing you significant costs down the road. In addition, smart plugs/power strips can reduce standby power (when appliances use energy even when turned off). Standby power can account for up to 10 percent of your home's total energy use.

Are there other ways to lower my power bill with smart home devices?

Your power company may have a program where you can earn bill credits for not using power during times of high electricity usage (typically around 4-8 p.m.). They also may offer an electric rate where electricity is cheaper if you avoid the high usage part of the day. If you participate in one of these rates or programs, smart devices can help shift your energy use to another time when prices are lowest. Examples include scheduling your electric car to charge, running a pool pump or even washing your clothes outside of the costliest hours. A smart thermostat may also be able to automatically shift energy use. And some power companies, such as DTE Energy or AEP Ohio (both located in the Midwest), offer tools that show your energy use in real-time and let you maximize energy efficiency with smart home devices. In general, your power company can be a good resource on how to shift your energy use to save money.

What does my power company offer around the smart home?

Many power companies now offer products and services to help their customers take advantage of the smart home. For example, many power companies offer an online marketplace, an Amazon-like website that allows you to purchase smart home and energy-efficient products, often with a significant rebate or incentive applied. On ComEd Marketplace, a website for Illinois' largest power company, customers can purchase a Google Nest Thermostat for only \$69 after instant rebate. Some power companies may give you a free smart thermostat or significant rebate if you enroll in a program to move your energy use away from times of high electricity usage (for example, the early evening on a hot summer day). These programs help power companies avoid using costly energy, and those savings are passed along to all customers, as well as the extra bill savings if you participate.

How Much Energy Can You Save?

Product	Average Retail Price	Common Models	Estimated Savings
Smart Thermostats	\$150-250	Ecobee, Google Nest and Honeywell	7-10% cooling 6-8% heating
Smart Lighting	\$10-20 per bulb	Smart LED bulbs (Cree, Wyze and Philips Hue)	7-27% on lighting
	\$25-60 per unit	Smart switches (GE, Lutron and Wemo)	
Smart Window Coverings	\$130-400 per window (Prices vary for retrofit vs. custom)	Smart shade/blind, controller, sensor (IKEA, Soma and Lutron)	11-20% heating and cooling 3% lighting
Smart Water Heating	\$50-180 (Smart controller and sensor retrofit)	Rheem, Aquanta and Bosch	15% on water heating costs
Smart Dishwashers	\$650-1,000	GE, LG and Whirlpool	5-9%
Smart Outlets/Power Strips	\$20-70	TP-Link, Wemo and SmartThings	16-20%
Smart Ceiling Fans	\$200-600	Hampton Bay, Hunter and Home Decorators	4-11% on cooling costs

Source: *Energy Impacts of Smart Home Technologies* from American Council for an Energy-Efficient Economy (ACEEE)

Where to Learn More

[CNET](#) | Smart Home Product Compatibility

[ENERGY STAR®](#) | Smart Home Tips for Saving Energy

[New York Times](#) | How to Make Your House a Smart Home

[Wirecutter](#) | Smart Home Devices

[Wirecutter](#) | How to Protect Your Smart Home From Hackers

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